Tuesday, 5/23/2006 8:28:40 AM User: Kim Johnston **Process Sheet** : HIGH AFT X-TUBE 412 : CU-DAR001 Dart Helicopters Services **Drawing Name** Customer Job Number : 27179 : 10559 **Estimate Number** : D412664203 **Part Number** : N 1A P.O. Number . D412-664-243 REV B **Drawing Number** : 5/23/2006 S.O. No. : 1) 11A This Issue : N/A Project Number : NC Prsht Rev. : NIA : LÀNDING GEAR Type **Drawing Revision** First Issue : 27177 Material **Previous Run** : 6/15/2006 Each **Due Date** Qty: Um: Written By Checked & Approved By Reformat; Added D3189-1 K/DS : Est Rev:E \ 04 02.16 Comment Est Rev:F 06-03-29 Remove Coments on Pick List JLM **Additional Product** Job Number: Description: Machine Or Operation: Seq. #: DOCUMENT CONTROL 1.0 DC Comment: DOCUMENT CONTROL 06.06.05 Photocopy bluefile and create labels as per PPP D412-664-203 CHG 003 2.0 Crosstube Material Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s) Pick: Qty Part number **Description Batch** 1 D6009-129 Crosstube ปี 25942 Check OD = 3.500"; ID = 2.250" 13C MORI SEIKI CNC LATHE LARGE 3.0 MORI SEIKI Comment: MORI SEIKI CNC LATHE LARGE 1-Fill tube with sand & install plugs DT8534 on both ends as per Folio FA166 (36) 2-Turn first side as per Folio FA166 3-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D412-664-243. INSPECT ALL DIM TO DIM SHEET 4.0 QC1 Comment: INSPECT ALL DIM TO DIM SHEET 061051 ()

W/O:		WORK ORDER CHANGES									
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		Description of NC		Corrective Action Section B		Verification	Approval						
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Tuesday, 5/23/2006 8:28:41 AM Date: User: Kim Johnston **Process Sheet** Drawing Name: HIGH AFT X-TUBE 412 Customer: CU-DAR001 Dart Helicopters Services Part Number: D412664203 Job Number: 27179 Job Number: Description: Seq. #: Machine Or Operation: MORI SEIKI CNC LATHE LARGE 5.0 MORI SEIKI Comment: MORI SEIKI CNC LATHE LARGE 148 1-Turn second side as per Folio FA166 2-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D412-664-243. 3-Polish entire outside surface of crosstube 128 4- Remove sand and plugs 5-Scribe part # and batch # using vibrating stylus as per Dwg D412-664-243 INSPECT ALL DIM TO DIM SHEET 6.0 QC1 Comment: INSPECT ALL DIM TO DIM SHEET 06/05/2 QC8 SECOND CHECK 7.0 Comment: SECOND CHECK 6/26/02 HAND FINISHING RESOURCE #1 HAND FINISHING1 Comment: HAND FINISHING RESOURCE #1 INSPECT WORKWING WALK Chemical Conversion Coat as per QSI 005 4.1 9.0 QC3/5 (OCe-OCe-OCO) Comment: Inspect work & Chemical conversion Coat BENDING BENDING MACHINE 10.0 Comment: BENDING MACHINE Bend tube as per Dwg D412-664-243 using CNC bender program 412-af and Folio FT010 11.0 QC6 DIMENSIONAL CHECK

Comment: DIMENSIONAL CHECK



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Tuesday, 5/23/2006 8:28:41 AM Date: User: Kim Johnston **Process Sheet** Drawing Name: HIGH AFT X-TUBE 412 Customer: CU-DAR001 Dart Helicopters Services Part Number: D412664203 Job Number: 27179 Job Number: Seq. #: Description: Machine Or Operation: LANDING GEAR RESOURCE 1 LANDING GEAR 1 12.0 Comment: I ANDING GEAR RESOURCE 1 1-Drill pilot holes in tube as per Dwg D412-664-243 using drill Jig DT8550 & DT8551 2-Ream hole to finish size in tube as per Dwg D412-664-243using drill Jig DT8550 & DT8551.Check dimensions between holes, both sides on both cuffs, to ensure alignment with saddle holes 3-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D412-664-243 HAND FINISHING RESOURCE #1 HAND FINISHING1 13.0 Comment: HAND FINISHING RESOURCE #1 Chemical Conversion Coat as per QSI 005 4.1 **OUTSIDE SERVICES** 14.0 Comment: Sub-Contracting OUTSIDE SERVICES Liquid Penetrant Inspection as per QSI 038Or C207/07/06(1) Issue P/O: 1627 LPI as per ASTM 1417 Level 2 Attach copy of NDT results to work order PACKAGING RESOURCE #1 **PACKAGING 1** 15.0 Comment: PACKAGING RESOURCE #1 Inspect for transit damage Ensure copy of NDT results attached to work order. **DIMENSIONAL CHECK** 16.0 **206** Comment: Inspect for damage & ensure results are as per Dwg D412-664-203 17.0 SPRAY PAINTING SPRAY PAINTING Comment: SPRAY PAINTING 1-Prime inside and outside crosstube as per QSI 005 4.2 2-Paint outside crosstube with White Imron as per QSI 005 4.2

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Page 3

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Tuesday, 5/23/2006 8:28:41 AM Date: Kim Johnston User: **Process Sheet** Drawing Name: HIGH AFT X-TUBE 412 Customer: CU-DAR001 Dart Helicopters Services Part Number: D412664203 Job Number: 27179 Job Number: Seq. #: **Machine Or Operation:** Description: Inspect Spray Paint 18.0 QC14 Comment: Inspect Spray Paint Wrap in plastic bag to protect from scratches 19.0 Abrasion Strip Comment: Qty.: Total: 1.7640 f(s) 1.7640 f(s)/Unit Pick: Qty Part number Description Batch 06-08-31 2 D2856-600(Cut to 10.090") Abrasion Strip **B243**よ8 D2856600 Abrasion Strip Comment: Qty.: 1.0080 f(s)/Unit Total: 1.0080 f(s) Pick: Qty Part number Description Batch 1 D2856-600(Cut to 10.870") Abrasion Strip **8347328** RT 06-06-31 Support D28961 Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s) Pick: Description Batch Qty Part number Support 8 266 8 3 08 31 ರಿಡಿ 1 D2896-1 22.0 Chafing Shield D31891 Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s) Pick: Description Batch 326687 Qty Part number 06 0831 Chafing Sheild 63466 2 D3189-1 MS2192028 Clamp(per MIL-DTL-8783C)

4.0000 Each(s)/Unit Total: 4.0000 Each(s)

Description Batch

4 MS21920-28 Clamp 19100479

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Tuesday, 5/23/2006 8:28:41 AM Date: Kim Johnston User: Process Sheet Drawing Name: HIGH AFT X-TUBE 412 Customer: CU-DAR001 Dart Helicopters Services Part Number: D412664203 Job Number: 27179 Job Number: Description: Seq. #: **Machine Or Operation:** clamp(per MIL-DTL-8783C) MS2192030 24.0 2.0000 Each(s) Comment: Qty.: 2.0000 Each(s)/Unit Total: Pick: Qty Part number **Description Batch** 06-31 Clamp M101568 2 MS21920-30 LANDING GEAR 1 Comment: LANDING GEAR RESOURCE 1 IFT 06.08-31 Assemble as per Dwg D412-664-203 INSPECT WORK TO CURRENT STEP QC5 26.0 Comment: INSPECT WORK TO CURRENT STEP PACKAGING RESOURCE #1 27.0 **PACKAGING** Comment: PACKAGING RESOURCE #1 Pick Packing Kit Bolt 28.0 AN640A Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s) Bolt M101124 L Batch: 29.0 Comment: Qty.: Total: 2.0000 Each(s) 2.0000 Each(s)/Unit Batch: M 19633 30.0 Comment: Qty.: 18.0000 Each(s)/Unit Total: 18.0000 Each(s) Washer

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Batch: M 100 6 9 7

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Part No):	PAR #:	Fault Category	: NCR:	: Yes No	DQA: _F	3	Date: ⊘	905/06 :
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Tuesday, 5/23/2006 8:28:41 AM Date: Kim Johnston User: **Process Sheet** Drawing Name: HIGH AFT X-TUBE 412 Customer: CU-DAR001 Dart Helicopters Services Part Number: D412664203 Job Number: 27179 Job Number: Description: Seq. #: **Machine Or Operation:** Nut MS21042L6 31.0 Total: 6.0000 Each(s) Comment: Qty.: 6.0000 Each(s)/Unit Nut 100151 Batch: QC4 INSPECT 100% KITS FOR COMPLETENESS 32.0 100% KITS FOR COMPLETENESS Comment: INSPECT PACKAGING RESOURCE # PACKAGING 1 33.0 Identify and pack for shipping as per PPP D412-664-203 Location:_ PPP Rev: 34.0 DC Comment: DOCUMENT CONTROL Inspection Level 21 Job Completion ω_{\rightarrow}

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DART AEROSPACE LTD	Work Order:	27179
Description: Crosstube Assembly (412 High Aft)	Part Number:	D412-664-243
Inspection Dwg: D412-664-243 Rev: B		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

X First Article Prototype

	spection Sheet awing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
ļ	2.684	+0.005/-0.000	2.687	~			
	2.748	+0.005/-0.000	2.752	~			
	2.884	+0.005/-0.000	2. 88B	~			
	3.019	+0.005/-0.000	3.023	/			
	3.163	+0.005/-0.000	3.166				
	3.308	+0.005/-0.000	33 33	11			
4	3.429	+0.005/-0.000	3.430				
SIDE	2.990	+0.005/-0.000	2,994	\ <u>\</u>			
S	2.618	+0.005/-0.000	2.622				
	0.200	+/-0.010	,200				
	R0.063	+/-0.010	.063	/		-	
	R0.500	+/-0.010	.500	/			
	4.971	+/-0.001	4.971	~			
	2.684	+0.005/-0.000	2.687	/			
	2.748	+0.005/-0.000	2.752	/			
	2.884	+0.005/-0.000	2.883	_ ~	·		
	3.019	+0.005/-0.000	3.021	<u> </u>			
	3.163	+0.005/-0.000	3.166	~		·	
	3.308	+0.005/-0.000	3.312	سا			
_	3.429	+0.005/-0.000	3.433	~			
EB	2.990	+0.005/-0.000	2.994	<u> </u>			
SIDE	2.618	+0.005/-0.000	2.621				
	0.200	+/-0.010	.500	<u> </u>			
	R0.063	+/-0.010	-063				
	R0.500	+/-0.010	.500	~			
	4.971	+/-0.001	4.971	~			
	124.09	+/-0.020	174-09				

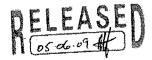
Measured by: MS	Audited by:	$\mathcal{E}_{\mathcal{S}}$	Prototype Approval:	N/A
Date: 06/05/27	Date:	aldollor	Date:	N/A

Rev	Date	Change		Revised by	Approved
Α	04.06.16	New Issue	(P/O D412-664-203)	KJ/JLM	1
В	06.03.09	Dwg Rev updated		KJ/JLM	





DESIG	in PH	DRAWN BY	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA
CHEC		APPROVED	DRAWING NO. REV. B D412-664-243 SHEET 1 OF 3
DATE	······································		TITLE SCALE
05.0	02.04		CROSSTUBE ASSEMBLY (412 HI AFT) NTS
Α		01.10.17	NEW ISSUE
В		05.02.04	ADD HOLES FOR COMPATABILITY



Qty	Part Number	Description
X	D412-664-243	CROSSTUBE ASSEMBLY (412 HIGH AFT)
1	D6009-129	CROSSTUBE
1	D2896-1	SUPPORT
2	D2856-600-1009	ABRASION STRIP
1	D2856-600-1087	ABRASION STRIP
4	MS21920-28	CLAMP
2.	MS21920-30	CLAMP
2	D3189-1	CHAFING SHIELD

GENERAL NOTES:

- TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 2) MATERIAL: MANUFACTURED FROM D6009-129

FINISHED LENGTH = 124.09±0.020

- FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
 - PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2

PAINT OUTSIDE PER DART 005 4.2

- PART IS SYMMETRIC ABOUT CENTERLINE.
- 5) RUN-OFF PART. BLEND OUT EDGE LONGITUDINALY, TRANSITION SHOULD BE SMOOTH.
- BEND PROGRESSIVELY WITH A MINIMUM OF 8 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUSP COPY
- INSTALL D2856-600-1009 AND D2856-600-1087 ABRASION STRIPS WITH A 0.13 (REF) GAP ON TO
- BOTTOM SIDE OF CROSSTUBE, CENTERED OPPOSITE D2896-1 SUPPORT, PER QSI 035. ENGINEERING 10) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE OF THE TUBE. OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCHASON TROLLED SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY, CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- IT IS OPTINAL TO TO SEAL EDGES OF SUPPORTS USING SIKAFLEX-241/291 SEALANT.
- 12) TORQUE CLAMPS 80 TO 100 IN-LB.

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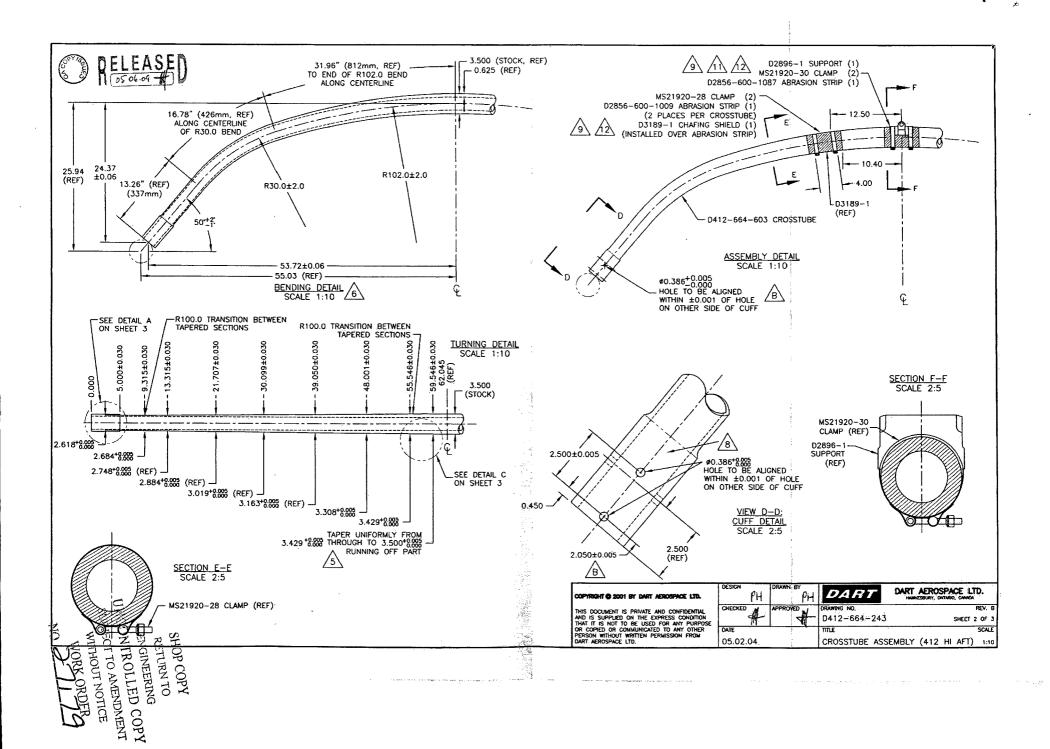
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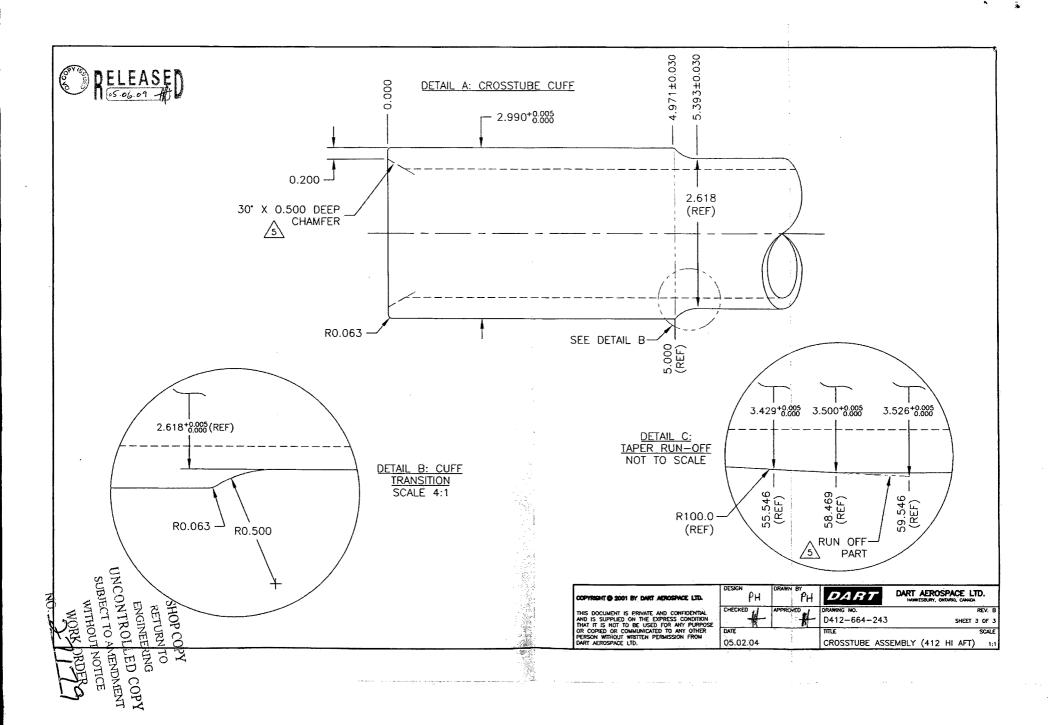
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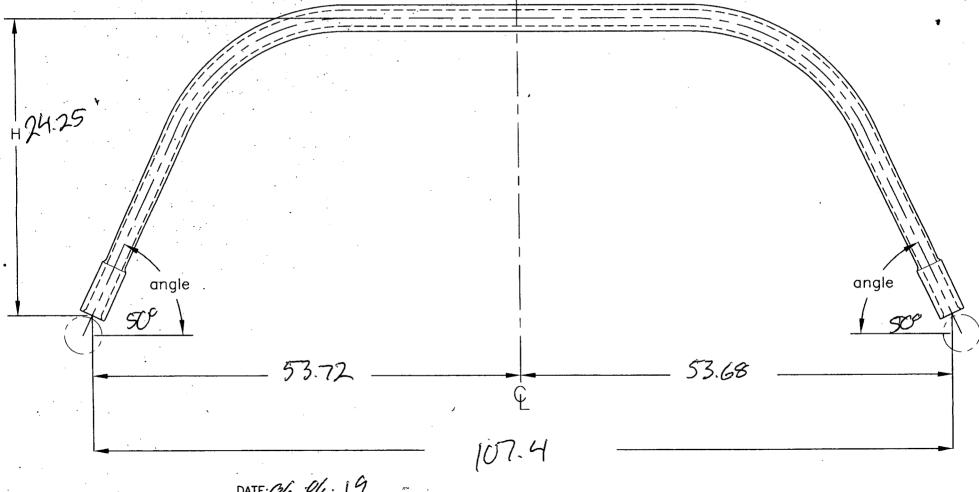
NO.2

WORK ORUE

WITHOUT NOTICE







DATE: 06 06.19

DESCRIPTION: 0412641203

BATCH NO: 27179

DRAWING: 12412-664-243 Par B

н:__24.37_

1/2 SPAN: 5372

TOTAL SPAN: 107.44

ANGLE: 50°



HeathAir

681 Ave. Lepine, Dorval, Québec H9P 1G3 Tél.: (514) 636-1000 • Fax: (514) 636-0031 W.O. Nº 34464

A.M.O. Number: 46/90

NON-DESTRUCTIVE TESTING REPORT

AIRCRAFT / COMPONENT INFORMATION

R	EGIS	STRA	ATIO	N:

MODEL/TYPE:

SERIAL NUMBER:

TOTAL HR/LDG:	OPERATED BY:		BASED AT	
•	e) cross tube (external se e at client) - parts delive 2-664-101 S/N 's B	rered to HeathAir. B26319, B27460,	TM E-1417-05 and the Dart B27461, B27459, B27277, 1 27458 & B27462.	•
RADIOGRAPHY	ULTRASONIC	PENETRANT	MAGNETIC PARTICLE	EDDY CURRENT
Cross Tubes. Note: A Level 3 pe	enetrant was substituted 25E Batch #04B503.		e with the above requireme Level 2 (3 is more sensitiv	
THE MAINTENAN	ICE DESCRIBED ABOVE HAS BEEN PER THE APPLICABLE STANDARDS OF AII		TH DATE July	11, 2006
INSPECTED BY	Day.	40	INSPECTION STAMP(S)	/R =
CUSTOMER: Dart Aerospa		OMER INFORMA	P.O. NUMBER CONTACT NAME:	1627 Linda
ABOUR	@		\$	
MATERIALS TRAVEL EXPENSES HOTEL EXPENSES	6 0		GST PST	
A THE PART ELABOR	INVOICE NO.		TOTAL \$	